



Main
~~Second Auxiliary~~ Request

Claims 1 to 11

1. An Apparatus (12) for treating gas (21) prior to the use of the gas (21) in an endoscopic procedure involving a patient (10), the gas being received into the apparatus (12) from a gas source, and the gas exiting the apparatus (12) being in flow communication with a means for delivering (11) the gas (29) to the interior of the patient, comprising:

- a) a housing (16) having an inlet and an outlet;
- b) a means (5) for communicating the outlet of an insufflator (1) with the inlet of the housing (16);
- c) a chamber (6) within the housing (16) and having an entry port (33) and an exit port (34), the entry port of the chamber being in flow communication with the inlet of the housing;
- d) a heating means (20) for heating the gas to a predetermined temperature;
- e) a means (23) in the housing adjacent the exit port of the chamber for sensing the temperature of the gas (21); and
- f) a means connected to the sensing means for controlling the heating means, whereby upon the determination by the sensing means of the temperature of the gas (21) being at a predetermined level, the controlling means (4) regulates the amount of heat applied by the heating means (20) to the gas (21) within the chamber (6),

characterized in that the apparatus comprises a humidification means (28) in the chamber (6) and an insufflator (1), having an outlet being in communication with the inlet of the housing (16), wherein the ~~insufflator~~ (1) receives gas from a gas source, and that the

humidification means (28) is in the path of travel of the gas through the chamber, in that the heating means (20) is disposed within the humidification means (28), and in that the gas is pressure- and volumetric flow rate-controlled by the insufflator (1),

wherein the means for delivering (11) the gas to the interior of the patient is a trocar or a needle,

wherein the endoscopic procedure is a laparoscopic procedure and

wherein the predetermined temperature is approximately 36°C to 38°C.

2. The apparatus of claim 1, and further comprising a source of power (3) for the controlling means (4).
3. The apparatus of claim 1, and further comprising a means within the housing for filtering (25) the gas (27), the filtering means being in flow communication with the exit port of the chamber (7).
4. The apparatus of claim 3, and further comprising a second filtering means (28) within and containing the water in the chamber (6).
5. The apparatus of claim 1, wherein the communicating means (5) is of sufficient length to allow the housing (16) to be disposed distal to the insufflator and proximal to the patient.
6. The apparatus of claim 5, wherein the housing (16) is disposed within about 0 to about 10 centimetres proximal to the patient.
7. The apparatus of claim 1, wherein a portion of the communicating means (5) is positioned proximal to the

controlling means (4), whereby the gas cools the controlling means and the controlling means preheats the gas.

8. The apparatus of claim 2, wherein the source of power is a battery (52).
9. The apparatus of claim 8, wherein the battery has a voltage (54) of from about 1.6 to 3.0 volts.
10. An apparatus according to claim 1, wherein the treatment of the gas is conditioning of the gas, and wherein the humidification means (28) comprises a volume of water in flow communication with the gas (21) as it travels through the chamber (6) and having filtering means positioned within and containing the water (28).
11. The apparatus of claim 10, and further comprising a second means for filtering (25) the gas (27) within the housing, the filtering means being in flow communication with the exit port of the chamber.